

CLAIMS:

- 1) A muzzle brake comprising:
 - a body having a first end, a second end, an internal plenum space and a plurality of vent slots, each vent slot having an aperture in communication with the internal
 - 5 plenum space, the internal plenum space comprising an elongate projectile path plenum having a central longitudinal axis and a plurality of enlarged serial plenums; and
 - a tubular cover arranged to overlay at least a portion of the body, the tubular cover having at least one side port in communication with at least one vent slot.
- 10 2) The muzzle brake of claim 1, wherein a central longitudinal axis of each enlarged serial plenum lies along the central longitudinal axis of the elongate projectile path plenum.
- 3) The muzzle brake of claim 1, wherein the aperture of each vent slot is in
- 15 communication with an enlarged serial plenum.
- 4) The muzzle brake of claim 1, wherein each vent slot is oriented at a non-zero orientation angle to the central longitudinal axis of the elongate projectile path plenum.
- 20 5) The muzzle brake of claim 4, wherein the orientation angle of a vent slot increases from the muzzle brake first end to the muzzle brake second end.
- 6) The muzzle brake of claim 4, wherein the orientation angle of a vent slot decreases from the muzzle brake first end to the muzzle brake second end.
- 25 7) The muzzle brake of claim 1, wherein a depth dimension of each vent slot increases from the muzzle brake first end to the muzzle brake second end.
- 8) The muzzle brake of claim 1, wherein the tubular cover is fixedly attached to the
- 30 body.

- 9) The muzzle brake of claim 1, wherein the side port in the tubular cover increases in size from a first end to a second end.
- 10) The muzzle brake of claim 1, wherein at least one vent slot is provided for each enlarged serial plenum.
- 11) The muzzle brake of claim 9, wherein the area of each vent slot aperture in communication with an enlarged serial plenum increases from the muzzle brake first end to the muzzle brake second end.
- 12) The muzzle brake of claim 1, further comprising a first group of vent slots and a second group of vent slots, each group of vent slots having at least one vent slot in communication with each enlarged serial plenum.
- 13) The muzzle brake of claim 12, wherein a vent slot of the first group of vent slots that is in communication with a first enlarged serial plenum comprises a mirror image of a vent slot of the second group of vent slots that is in communication with the first enlarged serial plenum.
- 14) The muzzle brake of claim 12, wherein the cover comprises a first side port and a second side port, the first side port in communication with at least one vent slot of the first group of vent slots, the second side port in communication with at least one vent slot of the second group of vent slots.
- 15) The muzzle brake of claim 1, wherein at least one vent slot further comprises a first side and a second side, the first side being nonparallel to the second side.
- 16) The muzzle brake of claim 1, wherein at least one vent slot further comprises a first side having curvature and a second side having curvature.
- 17) A muzzle brake comprising:

a body having a central longitudinal axis, a first end having an entrance aperture, a second end having an exit aperture, an internal plenum space and a plurality of vent slots including a first vent slot and a second vent slot, each vent slot oriented at a non-zero orientation angle to the central longitudinal axis of the body, each vent slot having an aperture in communication with the internal plenum space; and

a tubular cover arranged to overlay at least a portion of the body, the tubular cover having at least one side port in communication with at least one vent slot;

wherein the orientation angle of the first vent slot is different than the orientation angle of the second vent slot.

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18) The muzzle brake of claim 17, wherein the orientation angle of each vent slot increases from the muzzle brake first end to the muzzle brake second end.

19) The muzzle brake of claim 17, wherein the orientation angle of each vent slot decreases from the muzzle brake first end to the muzzle brake second end.

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20) The muzzle brake of claim 17, wherein the area of each vent slot aperture in communication with the plenum space increases from the muzzle brake first end to the muzzle brake second end.

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21) A muzzle brake comprising:

a body comprising an internal plenum space, an entrance aperture, an exit aperture, a first group of vent slots and a second group of vent slots, each vent slot having an aperture in communication with the internal plenum space; and

a tubular cover comprising a wall portion, a first side port and a second side port;

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wherein the tubular cover is arranged to overlay at least a portion of the body such that at least a portion of each vent slot is covered by the wall portion of the tubular cover, at least a portion of each vent slot of the first group of vent slots is in communication with the first side port of the tubular cover, and at least a portion of each vent slot of the second group of vent slots is in communication with the second side port of the tubular cover.

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